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The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No.11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM J. JOHNSON

Appeal No. 96-2997
Application 08/179,458¹

ON BRIEF

Before THOMAS, JERRY SMITH, and FRAHM, Administrative Patent Judges.

FRAHM, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1, 5 to 8, and 12 to 14. Claims 2 to 4 and 9 to 11 have been canceled.² In the Brief, appellant indicated that claims

¹ Application for patent filed January 10, 1994.

² Claims 2 to 4 and 9 to 11 were canceled in response to the first Office action as per appellant's instructions at page 2 of the amendment dated April 17, 1995.

7 and 14 are "not appeal[ed]" (Brief, page 2). Thus, claims 7 and 14 stand withdrawn, and only claims 1, 5, 6, 8, 12, and 13 remain on appeal.

BACKGROUND

The subject matter on appeal is directed to the field of slow motion video (specification, page 1), and in particular, to a method and apparatus for providing slow motion video at normal motion playing speed through the use of replicated frames (specification, page 2; and all claims 1, 5, 6, 8, 12, and 13 on appeal). As indicated in the specification (page 2), a stream of video data frames is dilated or replicated in order to provide slow motion, and the dilated stream contains copies or replications of the frames which are to be played in slow motion. Either a constant replication value (i.e., constant time dilation) can be used to copy the frames, or a non-constant value (i.e., skewed time dilation) can be used to copy the frames (specification, pages 2 to 3). In general, appellant's invention recited in all of the independent claims on appeal (method claims 1, 5, and 6, and apparatus claims 8, 12, and 13) seeks to provide a slow motion video method and apparatus which replicates certain frames in a video stream a greater number of times than other frames in the video stream. As further discussed, *infra*, we find that the applied reference to Poulett fails to teach or suggest at least this feature as it is recited in each of the claims on appeal.

Representative claim 1 is reproduced below:

1. A computer implemented method of providing slow motion to a video information stream that is provided to a display, said video information stream containing frames, each of said frames

having a place in said video information stream relative to said other frames in said video information stream, comprising the steps of:

- a) identifying a segment of said frames, said frames in said segment being original frames, said segment having beginning frames, intermediate frames and ending frames;
- b) dilating said segment by replicating said original frames to produce replicated frames, and for each of said original frames, placing said respective replicated frames in said video information stream adjacent to said original frame;
- c) said step of replicating said original frames further comprises the step of replicating said intermediate frames a greater number of times than the number of times that said beginning and ending frames are replicated.

The following reference is relied on by the examiner:

Poulett	3,637,928	Jan. 25, 1972
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Claims 1, 5, 8, and 12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Poulett.

Claims 6 and 13 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Poulett alone.³

³ We note that while the Answer lists Cohen et al. as being relied upon in the rejection of the claims on appeal (Answer, page 2, section 7), neither the statement of the rejection in the Answer (Answer, pages 2 to 6, section 9) nor the statement in the Final Rejection (Final Rejection, page 3, paragraphs 7 and 9) expressly rely upon Cohen et al.. In explaining the rejection of claims 6 and 13 under 35 U.S.C. § 103, the examiner takes Official Notice as to the feature of repeating original frames based on the position of the original frames in the video stream, i.e., acceleration or deceleration (first Office action, pages 10 to 11; Final Rejection, page 14; Answer, pages 9 to 10). Appellant traversed this statement, and the examiner then cited Cohen et al. in the Final Rejection as showing this feature. Lastly, we note that even when a reference is relied upon in a minor capacity to support a rejection, "there would appear to be no excuse for not positively including the reference in the statement of rejection." In re Hoch.

Rather than repeat the positions of appellant and the examiner, reference is made to the Brief and the Answer for the respective details thereof.

OPINION

At the outset, we note that the claims on appeal (claims 1, 5, 6, 8, 12, and 13) fall into three groups. Claims 1 and 8 on appeal recite a method and apparatus for slow motion video wherein middle frames are copied more times than beginning and end frames; claims 5 and 12 on appeal recite a method and apparatus for slow motion video wherein frames at one end of a video stream are copied more times than frames at the other end; and claims 6 and 13 on appeal recite a method and apparatus for slow motion video wherein the number of times each frame in the video stream is copied is dependent upon frame position in the video stream.

In reaching our conclusion on the issues raised in this appeal, we have carefully considered appellant's specification and claims, the applied patent, the respective viewpoints of appellant and the examiner, and all other evidence of record. While we cannot say that there is better prior art available than that applied by the examiner, we can say that the art relied upon does not support the rejection.

428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970). Cohen et al. has not been positively included in a statement of the rejection, and thus we find Cohen et al. not to be relied upon in the rejection of claims 6 and 13.

We find, for the reasons that follow, that the feature recited in claims 1, 5, 6, 8, 12, and 13 on appeal, of providing slow motion by dilating a segment of frames and replicating some frames of the segment more times than other frames, is neither taught nor would have been suggested by the prior art applied by the examiner. Accordingly, we will reverse the decision of the examiner rejecting claims 1, 5, 6, 8, 12, and 13 on appeal.

Rejection of Claims 1, 5, 8, and 12 Under 35 U.S.C. § 102(b) Over Poulett

A prior art reference anticipates a claim if it discloses, either explicitly or inherently, each and every limitation of the claimed invention. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997); Akzo v. U.S. International Trade Commission, 808 F.2d 1471, 1479, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 107 S.Ct. 2490 (1987); In re Donohue, 766 F.2d 531, 533, 226 USPQ 619, 621 (Fed. Cir. 1985). For an unstated element to be found inherent in an anticipating reference, it must exist as a matter of scientific fact and flow naturally from the elements expressly disclosed in the prior art reference. Hughes Aircraft Co. v. United States, 15 Cl. Ct. 267, 271, 8 USPQ2d 1580, 1583 (Cl. Ct. 1988). However, inherency may not be established by probabilities or possibilities regarding what *may* have resulted in the prior art. In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981). Furthermore, “[t]he mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.” Hansgird v. Kemmer, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)(emphasis in original); see also Ex parte Skinner, 2 USPQ2d 1788,

1789 (BPAI 1986).

Claims 1 and 5 on appeal are directed to a method of, and claims 8 and 12 on appeal are directed to the apparatus for, providing slow motion video by identifying and dilating a segment of frames. Each of the frames in the segment is dilated to produce replicated frames. Furthermore, intermediate frames (claims 1 and 8 on appeal) or frames at one end of the segment (claims 5 and 12 on appeal) are replicated a greater number of times than beginning and ending frames (claims 1 and 8 on appeal) or frames at a second end of the segment (claims 5 and 12 on appeal). The examiner repeatedly (Answer, pages 3 to 4) relies upon Poulett's disclosure at column 3, lines 53 to 55 as inherently anticipating the recited feature of replicating intermediate or

first frames more times than beginning and ending or second frames. The examiner states that it is "*inherent* that the frames at one end of the segment *could* have a different repetition rate than the frames at the other end of the segment" (Answer, pages 3 and 4). We find this to be a *possibility* or *probability* regarding what *may* have resulted from Poulett's express disclosure of replicating frames in a segment with three possible constant speeds (slow motion 1, slow motion 2, and slow motion 3 as shown in figure 10C). Poulett's slow motion device is capable of three speeds: constant slow motion speed 1 using button S8; constant slow motion speed 2 using button S7; and variable slow motion speed 3 using button S6 which allows the operator to vary speed using a control lever. While it is

possible that a user *might* choose different speeds during playback of a slow motion segment of frames such that some frames in the segment are replicated more than others, we can find no express or inherent disclosure in Poulett of varying a replication amount within a frame segment which is to be dilated in order to provide slow motion video.

The examiner argues that each element of claims 1, 5, 8, and 12 on appeal is expressly disclosed, with the exception of the most important element of a step or means for replicating certain frames in a segment more times than other frames in the segment. The examiner says this step or means for replicating is inherent in light of column 3, lines 53 to 55 of the Poulett reference (Answer, pages 3 to 4). However, we find it clear that such a feature is not expressly disclosed by Poulett nor is it inherent from Poulett's column 3, lines 50 to 53 as alleged by the examiner. In other words, such a feature does not flow naturally from the elements expressly

disclosed in Poulett, and does not flow undeniably and irrefutably from the express disclosure of Poulett. It is only present by virtue of the possibility of the intervening step of human perception, awareness and understanding (e.g., user intervention to vary slow motion speed, using buttons S6-S8, during playback of a segment of frames to be dilated).

We find the examiner's argument, that the speed in Poulett may vary according to user preference such that some frames in a segment may have a different speed or number of replicants than

other frames in the segment (Answer, top of page 9), to be unpersuasive. This line of reasoning smacks of obviousness, and considerations of obviousness or user preference are not applicable to the rejection before us under 35 U.S.C. § 102. We agree with appellant (Brief, pages 5 to 6) that Poulett discloses a *constant* slow motion as opposed to a *skewed* slow motion where different speeds exist in the same segment, and that Poulett does not specifically disclose any change in slow motion speed within a segment (Brief, page 7). We find that the examiner has failed to make a *prima facie* case of anticipation.

Therefore, we conclude that appellant's claims 1, 5, 8, and 12 are not anticipated by Poulett under the doctrine of inherency. This is because the important recited feature of appellant's claims 1, 5, 8, and 12 on appeal of providing slow motion, by replicating certain frames in an identified segment more times than other frames in the segment (i.e., utilizing skewed time dilation), is neither expressly nor inherently disclosed by the applied reference to Poulett.

Rejection of Claims 6 and 13 Under 35 U.S.C. § 103 Over Poulett Alone

With respect to claims 6 and 13 on appeal, appellant argues that Poulett does not teach nor would have suggested that the number of times of replication of frames be dependent upon frame position (Brief, page 7). The examiner agrees (Answer, pages 5 to 6), as do we. The examiner alleges (Answer, pages 5 and 6) that by connecting a frame buffer to the output of Poulett, frames could be recorded and then read out to create the type of skewed dilation recited in claims 6 and 13 on appeal.

Our careful review of Poulett fails to reveal any motivation or suggestion to record and play back a video segment in different slow motion speeds for the purpose of providing a gradual slow motion effect. In addition, the examiner has not cited any persuasive motivation for doing so, other than to say that such a video effect is well-known in the art (Answer, pages 5 and 6). We agree with appellant (Brief, pages 7 to 8) that there would have been no motivation for one of ordinary skill in the art to attach and use a buffer in such a way and that to have done so would have involved the use of hindsight.

The primary purpose of appellant's disclosed invention is to vary slow motion speed within a dilated frame segment in order to permit gradual slow motion effects (specification, page 9) and to avoid abrupt changes from/to normal video speed to/from slow motion video speed which is a common problem in the prior art (appellant's amendment of April 17, 1995, page 9). Appellant attempts to overcome these difficulties with the prior art by using skewed time dilation which is dependent upon frame position. This feature is positively recited in appellant's claims 6 and 13 on appeal. To say that it would have been obvious to use frame position to control replication in a slow motion video segment, in light of a reference which fails to teach or suggest

such, is not plausible and would require recourse to appellant's disclosure, i.e., the use of hindsight.⁴

⁴ We note that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But when it takes into account knowledge and motivation gleaned only from the applicant's

To modify Poulett to achieve appellant's claimed invention involves the application of knowledge and motivation not clearly present in the prior art. See In re Sheckler, 438 F.2d 999, 1001, 168 USPQ 716, 717 (CCPA 1971). We conclude that there would have been no motivation to modify Poulett to achieve the subject matter of claims 6 and 13 on appeal.

In response to appellant's traversal of the examiner's statement that video effects such as acceleration and deceleration were well-known in the art (appellant's amendment of April 17, 1995, page 10; Brief, page 8), the examiner relied (Final Rejection, page 14; Answer, pages 9 to 10) on Cohen et al. (columns 13 and 44 to 47) to show that such a feature would have been well-known at the time of appellant's invention. Our close review of the Cohen et al. reference reveals that Cohen et al. fail to disclose acceleration and deceleration in the replication of frames in a video segment. Instead, we agree with appellant (Brief, page 8), and find that Cohen et al. (see column 1, lines 15 to 20) are concerned with switching from a first segment of frames to a second segment of frames (e.g., wiping, fading, or cutting between video segments). Cohen et al. do not appear to be related to skewed time dilation or replication of frames to make slow motion effects.

disclosure, and not only knowledge and motivation which was within the level of ordinary skill at the time the claimed invention was made, such a reconstruction is improper and is said to employ hindsight. See In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

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In view of the foregoing, the decisions of the examiner rejecting claims 1, 5, 6, 8, 12, and 13 under 35 U.S.C. §§ 102(b) and 103 are reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
JERRY SMITH)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
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